Project Title: Flooding in St. George
Created by: Daniel Morris
Class: St. George CMAP 2017

Project Description	In this project students will be learning about the flooding that occurred in St. George in 2005 and 2010 and using mapping software to map the areas that were affected. Students will then use information from the map of the floodplain to determine safe areas for recreation, building and farming in the St. George area.
Community Issue or Problem Selected -How project evolved?	Flood control and safety in St. George.
Community Partner(s)	BLM, St. george City, Washington County
Project Objectives	To accurately map where floods in the past have damaged homes, yards, parks and farmland. Students will then use that information to determine where it is safe (from flooding) to build in the future.

Utah Core Standards/Objectives	**Earth Science** **Standard 4:** Students will understand the dynamics of the hydrosphere. **Objective 2** Analyze the characteristics and importance of freshwater found on Earth's surface and its effect on living systems. Research and report how communities manage water resources (e.g., distribution, shortages, quality, flood control) to address social, economic, and environmental concerns.
Essential Question(s) -Spatial Issue	How has flooding of the Virgin River in 2005 and 2010 changed the St. George area? What changes should we make to the area if we expect flooding to occur again? (recreation, building , farming, plants, animals, economy).
Assessments (rubrics, scoring guides)	Students will be evaluated on performance as they create their map of the floodplain of the virgin river in the St. George area and answer questions about what changes should occur within the community to prepare for flooding.

Project Products	Map of the virgin river floodplain of the St. George area.
Project Timeline (include a step by step Procedures)	Day 1 Introduction to St. George city maps and arcGiS software. Day 2 Students research specific areas affected by flooding in previous years and map those points using their software. Day 3 Students will complete their maps and shade in the areas that have been affected by floods. Day 4 Students will present their maps and we will have a class discussion on flood control in the future. we will discuss what the city should do to prepare for floods that may occur. Day 6 Continue discussion about flooding. watch youtube videos of the floods that have occurred in the St. George Area.
Resources Needed	ArcGIS software Data about of specific areas that were affected by the 2005 and 2010 floods in St. George. I will need to gather this using the city information below and talking with individuals in the community who live in or near the floodplain. I will prepare an information sheet for students to use to complete their projects. Use the website: https://maps.sgcity.org/sgcitymaps/ for maps of the city.
Skills Required	Basic Computer skills Knowledge of how to use ArcGis software
Project Team Member Roles	**Teacher(s): Daniel Morris** **Students: Deserth Hills Midddle School Earth Science Class**

Celebration/Presentation	Students will share their maps with the class and their ideas about flood control in the area. ----Students could potentially share their maps with the city/city council ---
Project Evaluation	As students finish their projects I will evaluate overall effectiveness of the activity based on student responses. (They better not decide to build their houses or businesses without considering where the floodplain for the area lies)
Project Bibliography	ttps://maps.sgcity.org/sgcitymaps/ http://www.uen.org/core/core.do?courseNum=3600
Plans for Future CMaP Activities	

Optional:
-Lesson Plans
-Student Artifacts
-Publicity